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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,306	10/07/2003	Blake Burnette	020569-03100	4726

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EXAMINER	
HANLEY, JOHN C	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

RD

Office Action Summary	**Application No.** 10/680,306	**Applicant(s)** BURNETTE ET AL.
	Examiner John C. Hanley	**Art Unit** 2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 03 May 2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 35-68 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 35-68 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 8/16/05 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 39, 40, 51, 52, 61, and 62 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims specify the type of fluid to be analyzed, while this fluid is not positively recited as an element of the structure recited in the respective parent claims. Thus, these claims do not further limit the structure of the parent claims.

2. Claims 35-62 are objected to because of the following informalities: These claims recite that they control density in the preambles of the independent claims, yet no structure for controlling density is recited in the claims. The functional statements regarding such control are structurally unsupported. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 35-43, 46, 47, 49, 51-55 and 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ence et al (US 6581451).

5. Ence et al shows a density measuring device for measuring fluid flowing in the bore of a straight horizontal pipeline including inlet and outlet pipes 6, and a second pipe 4 connected at each end to the inlet and outlet pipes via flexible couplings 2. Pipe 4 rests on a weight-measuring unit capable of measuring the weight of the second pipe, where the weight-measuring unit can include a load cell. It would have been obvious to one of ordinary skill in the art to use the device of Ence et al to measure the density of any fluid flowing through the density measurement device.

6. Regarding claims 53, although Ence et al doesn't specifically use the term "control unit" for the device 20, it is stated, "the density of the material being transported may be determined by measuring the weight of duct segment 4 with and without material in the airflow" (i.e., fluid). See column 3 lines 26-30. It is also stated at the top of column 4 that to determine the density of material flowing in the pipeline, material-free fluid is transported through duct segment 4 and weighed, and recorded, and then material is introduced into the fluid and reweighed. The difference between the weights is then determined. Thus, if not anticipated as inherent that element 20 constitutes a control unit capable of performing the above mentioned operation, it would have been clearly obvious to one of ordinary skill in the art to record the weights in a computer to perform the subtraction and density determining steps.

7. Regarding claims 38, 49, and 60, although Ence et al does not specifically state that the cross-sectional area is uniform, one viewing Figure 1 would interpret the cross-sectional area to be uniform, or obvious to use a uniform pipe cut out of a standard uniform pipe to save costs.

8. Regarding claims 43 and 55, the statement that "scale" 20 supports the weight of pipe 4 and measures the weight with a load cell makes obvious, if not inherent, that the load cell is of the compression type.

9. Regarding claims 39, 40, 51, 52, 61, 62 the antecedent fluid of the parent claims is an intended use, and is therefore not regarded as structurally limiting the measurement device claimed in the parent claims. Therefore, the named fluid is not regarded as other than a statement of intended use in these claims, and in any event, it would have been obvious to one of ordinary skill in the art to use the device to measure the density of any kind of fluid passing there through.

10. Claims 44, 45, 48, 50, 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ence et al as applied to claims 35-43, 46, 47, 49, 51-55 and 58-62 above, and further in view of Ford et al (US-4817428).

11. Ence et al lacks a teaching of a weight-measuring unit positioned above the second pipe to measure weight via a tension-type load cell, or a second pipe that is curved and not uniform in cross section. However, Ford et al shows a density-measuring device where the pipe section being weighed is curved and has a non-uniform cross section. It further shows a load cell above the pipe to measure tension in line 4.

12. It would have been obvious to one of ordinary skill in the art to modify the pipe section 4 of Ence et al to be curved and of non-uniform cross section as taught in Ford et al, since the shape, size and uniformity are not critical to the measurement, so long as the volume of the section being weighed for density measurement is known. Further,

it would have been obvious to substitute the tension-type load cell of Ford et al for the compression type of Ence et al as both are known equivalents for determining the same function.

13. Claims 63-64 and 67-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ence et al (US 6581451) as applied to claims 35-43, 46, 47, 49, 51-55, 58-62 above, and further in view of applicant's admissions plus Heine et al (US-4285239).

14. Although Ence et al do not specifically teach to use the densitometer to measure and control the density of well fluids while mixing them to control their densities before injection into a well, applicant admits in the prior art measures density of the well fluids while mixing or blending them, to control their densities before injection into a well. Applicant further admits that nuclear densitometers have been used to effect the measurement of density, and Heine et al teaches that a density meter having a weighed pipe section flexibly coupled in a pipeline may be a substitute for a nuclear density meter. Therefore, it would have been obvious to use the density measurement of Ence et al in the measurement and control application relating to well fluids indicated by applicant as prior art, as motivated by Heine et al.

15. Claims 65 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ence et al in view of applicant's admissions plus Heine et al, as applied to claim 63 above, and further in view of Carlson (US-6007227).

16. Ence et al lack a specific teaching of measuring the density while the fluid is in a process pipe on a shipping vessel or truck.

17. However, Carlson teaches to measure density of a fluid being processed in a truck-mounted blender, where the densitometer is a nuclear density meter, whereas Heine et al teaches that a density meter having a weighed pipe section flexibly coupled in a pipeline may be a substitute for a nuclear density meter.

18. Therefore, it would have been obvious to use the density meter of Ence et al as a substitute for the nuclear density meter in Carlson et al on a blender truck as motivated by Heine et al.

19. Applicant's remarks have been read and considered, but are unpersuasive. Despite applicant's remarks, applicant has not recited any elements for controlling density. The functional statements are not structurally limiting, and in any event, applicant has admitted that such control is known in the field. Further, applicant has not indicated any structural differences between the recited claims that would distinguish over Ence et al regarding the allegation that applicant's invention is structurally capable of measuring a heavy fluid while Ence cannot. Regarding the method claims, these are not rejected by Ence et al alone. Therefore, applicant's arguments are moot.

20. Nor has applicant convinced that the concepts taught in Ence et al are inapplicable to density measurement for the fluids applicant desires to measure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Hanley whose telephone number is 571-272-2195. The examiner can normally be reached on M-F 9AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JCH

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